



**US EPA OECA
AIR INSPECTION REPORT**

FRS #: Not Applicable Inspection Dates: **September 28-30, 2016**
AFS #: Not Applicable
Inspection Type: Clean Air Act, Partial Compliance Evaluation
Company Name: **Encana Oil and Gas (USA) Inc.**
Facility Name: **Multiple Production Facilities**
Physical Location: *Karnes County, Texas*
Mailing Address: Encana Eagle Ford Office
5003 State Highway 123
Karnes City, TX 78118
County/Parish: **KARNES COUNTY**
Reg. Programs: **SIP, Title V, and Quad O**
SIC Code: **1311 Crude Petroleum and Natural Gas**

Facility Representatives:

Darren Fulkerson	Environmental Specialist	713 858 7805
Daniel Escobar	Environmental Specialist	Not Provided

EPA Inspectors:

Alexis North	Environmental Scientist	303-312-7005
Natalia Vazquez	Environmental Engineer	215-814-2121
Scott Patefield	Environmental Scientist	303-312-6248
Nick Elger	Environmental Specialist	202-343-9460

EPA Inspector:



Alexis North, Environmental Scientist

2/21/2017
(Date)

EPA Inspector:



Natalia Vazquez, Environmental Engineer

2/21/2017
(Date)

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SECTION 1 – PURPOSE OF THE INSPECTION

US EPA Region 8 CAA inspector Alexis North and Region 3 CAA inspector Natalia Vazquez initially phoned the Encana Eagle Ford Office located in Karnes City, Texas late morning on September 28, 2016. Within a few minutes, Encana's Environmental Scientist, Darren Fulkerson, was in contact with Alexis North. Shortly thereafter, EPA inspectors met with Darren Fulkerson at the Red-Crest Horizons production facility.

During the initial meeting at the Red-Crest Horizons production facility, Alexis North and Natalia Vazquez received a short safety briefing. Alexis North informed Darren Fulkerson the purpose of the inspections is to evaluate the compliance status of oil and gas production facilities in the Eagle Ford Shale with applicable requirements of the Clean Air Act (CAA). The scope of the inspection was a partial compliance evaluation (PCE) including evaluation of the compliance status of the facility with applicable CAA regulations, Title V operating permit requirements, and Texas State Implementation Plan (SIP) regulations, specifically looking at storage tanks and their associated control equipment. The primary objectives were for the EPA inspectors to evaluate on-site conditions, and conduct an emissions survey at production facilities in Karnes County.

On the second and third inspection days, EPA CAA inspectors Scott Patefield and Nick Elger also joined these inspections.

SECTION 2 – GENERAL FACILITY DESCRIPTION

Each facility receives comingled fluids consisting of crude oil/condensate, produced water, and raw natural gas from several wells located in the area. At each facility, the mixture is separated into the material streams of oil/condensate, produced water, and raw natural gas through physical separation methods. Raw natural gas is transported off-site via pipeline. The separated oil/condensate and produced water is stored on-site in tanks that are equipped with closed vent systems consisting of vapor recovery units and a low pressure flare. The contents of the tanks are regularly offloaded into trucks and hauled off-site.

SECTION 3 – SITE VISITS

At each of the facilities listed in Table 1 below, emissions surveys were conducted by the government inspection team using the following equipment:

- Infrared (IR) camera manufactured by FLIR, Model GF-320, Optical gas imaging, IR camera surveys of emissions sources, were each conducted first in high sensitivity mode (HSM) for screening purposes, and then in full automatic mode (auto).
- A digital camera for photographs in visible light.
- PID manufactured by Ion Science, PhoCheck Tiger with a 10.6 eV lamp. The PID was used to survey the plant for emissions of volatile organic compounds (VOC). The PID was calibrated with isobutylene, and is capable of detecting VOC as low as 1 ppb, depending on the gas.

Inspectors scanned all tanks and emission capture equipment with the IR looking for any indication of venting. If venting was detected, the inspector attempted to identify the source(s) and record an IR video of the venting emissions. Digital pictures of the facility sign were taken at each site in order to identify the following photos as well as get a time stamp of entry to that facility.

Additional digital photos were taken in an effort to document operations at each site.

PID readings were occasionally taken when emissions were detected using the IR camera when an accessible plume could be identified. Due to location or distance of plumes, PID readings were not consistently taken.

EPA inspectors did not go on top of storage tanks due to H₂S threat and Encana's standard safety procedures requiring tank air and full face mask when climbing tanks.

TABLE 1: LIST OF FACILITIES INSPECTED SEPTEMBER 28-30, 2016

Facility	Date	Time in	Time out	Latitude	Longitude
Red Crest-Horizons	9/28/2016	11:08	11:47	29.03833	-97.9631
Loves-Crews	9/28/2016	12:09	12:30	28.86556	-97.9039
Kotara-Ridley	9/28/2016	12:44	1:09	28.835	-97.9253
Haley-McCallister	9/28/2016	1:18	1:50	28.82139	-97.9036
Patton Trust North	9/29/2016	9:20	9:57	28.91639	-97.8539
Patton Trust South	9/29/2016	10:09	10:45	28.89361	-97.835
Burda Golden	9/29/2016	11:23	12:22	29.07694	-97.6997
Julie Facility	9/29/2016	12:53	1:20	29.16917	-97.7314
Betty Facility	9/29/2016	1:33	1:51	29.12611	-97.8267
Zunker Facility	9/29/2016	2:43	3:05	28.91833	-98.0533
Dixon Facility	9/29/2016	3:11	3:35	28.89722	-98.0597
Dougherty Facility	9/30/2016	9:50	10:20	28.93056	-97.9747
Opiela Fitch Facility	9/30/2016	10:27	10:55	28.96444	-98.0139

SECTION 4 – EXIT MEETING

Darren Fulkerson requested an exit meeting and Alexis North declined and indicated that OECA-OCE-AED would contact Encana to conduct an exit meeting in the coming weeks, if necessary.

SECTION 5 – EMISSIONS SURVEY DATA COLLECTED

TABLE 2: FLIR VIDEO LOG OF FACILITIES INSPECTED SEPTEMBER 28-30, 2016

Red Crest-Horizons- 9/28/2016		
<i>File Number</i>	<i>Location</i>	<i>Description</i>
MOV_0144.mp4	Produced water storage tank(s).	Venting emissions from thief hatch.
MOV_0148.mp4	Produced water storage tank(s).	Venting emissions from thief hatch.
MOV_0149.mp4	Produced water storage tank(s).	Venting emissions from thief hatch.
Loves-Crews-9/28/2016		
<i>File Number</i>	<i>Location</i>	<i>Description</i>
MOV_0151.mp4	Produced water storage tank.	Venting emissions from pressure relief valve.
Kotara-Ridley- 9/28/2016		
<i>File Number</i>	<i>Location</i>	<i>Description</i>
MOV_0152.mp4	Storage tanks.	Venting emissions from unknown source.
MOV_0153.mp4	Storage tanks.	Venting emissions from unknown source.
MOV_0154.mp4	Storage tanks.	Venting emissions from unknown source.
Haley-McCallister- 9/28/2016		
<i>File Number</i>	<i>Location</i>	<i>Description</i>
MOV_0155.mp4	Oil/condensate storage tank(s).	Venting emissions from unknown source.
MOV_0156.mp4	Oil/condensate storage tank(s).	Venting emissions from unknown source.
Patton Trust North- 9/29/2016		
<i>File Number</i>	<i>Location</i>	<i>Description</i>
MOV_0157.mp4	Blending tank.	Venting emissions from unknown source.
Patton Trust South- 9/29/2016		
<i>File Number</i>	<i>Location</i>	<i>Description</i>
MOV_0158.mp4	Dehy unit condenser.	Venting emissions from condenser vent stack.
Burda Golden- 9/29/2016		
<i>File Number</i>	<i>Location</i>	<i>Description</i>
MOV_3230.mp4	Pneumatic device.	Venting emissions from pneumatic device.
MOV_3231.mp4	Oil/condensate storage tanks.	Venting emissions from thief hatch.
MOV_3232.mp4	Oil/condensate storage tanks.	Venting emissions from thief hatch.
MOV_3233.mp4	Low pressure flare.	Heat from flare and emissions from flare.
Julie Facility- 9/29/2016		
<i>File Number</i>	<i>Location</i>	<i>Description</i>
MOV_0159.mp4	Produced water storage tanks.	Venting emissions from unknown source during a tanker truck load out of produced water/routing of truck vapors to storage tanks closed vent system.
MOV_3234.mp4	Storage tanks.	Venting emissions from thief hatch.
MOV_3235.mp4	Storage tanks.	Venting emissions from thief hatch.
MOV_3236.mp4	Storage tanks.	Venting emissions from thief hatch.

TABLE 2: FLIR VIDEO LOG OF FACILITIES INSPECTED SEPTEMBER 28-30, 2016
(continued)

Betty Facility- 9/29/2016		
<i>File Number</i>	<i>Location</i>	<i>Description</i>
MOV_3237.mp4	Storage tanks.	Venting emissions from pressure relief device.
MOV_3238.mp4	Storage tanks.	Venting emissions from pressure relief device.
MOV_3239.mp4	Low pressure flare.	Heat from flare and emissions from flare.
Zunker Facility- 9/29/2016		
<i>File Number</i>	<i>Location</i>	<i>Description</i>
MOV_0160.mp4	Storage tanks.	Venting emissions from unknown source.
MOV_3240.mp4	Crude/condensate storage tanks.	Venting emissions from unknown source.
MOV_3241.mp4	Crude/condensate storage tanks.	Venting emissions from unknown source.
MOV_3242.mp4	Crude/condensate storage tanks.	Venting emissions from unknown source.
MOV_3243.mp4	Crude/condensate storage tanks.	Venting emissions from unknown source.
MOV_3244.mp4	Crude/condensate storage tanks.	Venting emissions from unknown source.
MOV_3246.mp4	Crude/condensate storage tanks.	Venting emissions from unknown source.
Dixon Facility- 9/29/2016		
<i>File Number</i>	<i>Location</i>	<i>Description</i>
MOV_3247.mp4	Storage tank.	Venting emissions from thief hatch.
MOV_3248.mp4	Crude/condensate storage tank.	Venting emissions from thief hatch.
MOV_3249.mp4	Crude/condensate storage tank.	Venting emissions from thief hatch.
Dougherty Facility- 9/30/2016		
<i>File Number</i>	<i>Location</i>	<i>Description</i>
MOV_3250.mp4	Enclosed, low pressure, combustor.	Heat and emissions from enclosed combustor.
MOV_3251.mp4	Storage tank.	Venting emissions from unknown source.
Opiela/Fitch- 9/30/2016		
<i>File Number</i>	<i>Location</i>	<i>Description</i>
MOV_0161.mp4	Storage tanks.	Venting emissions from pressure relief valve.
MOV_3252.mp4	Storage tanks.	Venting emissions from pressure relief valve.
MOV_3253.mp4	Pneumatic device.	Venting emissions from pneumatic device.

TABLE 3: PHOTOLOG OF FACILITIES INSPECTED SEPTEMBER 28-30, 2016

Red Crest Horizon Central Production Facility – September 28, 2016	
<i>File Number</i>	<i>Description</i>
DSC00989	Sign at entrance of the facility
DSC00990	General view of facility, storage tanks (oil)
DSC00991	General view of facility, other equipment, such as compressor engines
DSC00992	General view of facility
DSC00993	Vapor Recovery Towers (6)
DSC00994	Produced water tanks (4)
DSC00995	Dehydrator
DSC00996	Heater treaters
DSC00997	Top of a tank and a pressure relief valve
DSC00998	Vapor Recovery Unit
DSC00999	Other view of vapor recovery towers, and storage tanks
DSC01000	Compressor Engines
Loves/Crews Central Production Facility – September 28, 2016	
<i>File Number</i>	<i>Description</i>
DSC01001	Sign at entrance of the facility
DSC01002	Smoking flare
DSC01003	General view of facility, storage tanks (oil)
DSC01004	General view of facility, other equipment
DSC01005	Storage tanks (produced water and drip tanks)
DSC01006	General view of the back of the facility
DSC01007	General view of the back of the facility
Kotara-Ridley Central Production Facility – September 28, 2016	
<i>File Number</i>	<i>Description</i>
DSC01008	Sign at entrance of the facility
DSC01009	Sign at entrance of facility
DSC01010	General view of facility
DSC01011	Storage tanks (produced water)
DSC01012	Storage tanks (condensate)
DSC01013	Storage tanks (condensate)
DSC01014	Ladder, access to storage tanks
DSC01015	EnCana Employee with respirator (Alfonso)
Hailey/McAlister Central Production Facility – September 28, 2016	
<i>File Number</i>	<i>Description</i>
DSC01016	Sign at entrance of the facility
DSC01017	General view of facility
DSC01018	Storage tanks and truck during loading
DSC01019	Storage tanks (condensate)
DSC01020	Enclosed Flare
Hailey/McAlister Drip Station – September 28, 2016	
<i>File Number</i>	<i>Description</i>
DSC01021	Sign at entrance of the facility
DSC01022	General view of facility

TABLE 3: PHOTOLOG OF FACILITIES INSPECTED SEPTEMBER 28-30, 2016
(continued)

Patton Trust North Central Production Facility – September 29, 2016	
<i>File Number</i>	<i>Description</i>
DSC01023	Sign at entrance of the facility
DSC01024	General view of facility, storage tanks
DSC01025	General view of facility
DSC01026	Produced water tanks (4) and drip tanks (2)
DSC01027	Search tank
DSC01028	Pressure relief valve on top of drip tank
DSC01029	Pressure relief valve on top of condensate tank
DSC01030	Pneumatic Fisher L2
DSC01031	Pump
Patton Trust South Central Production Facility – September 29, 2016	
<i>File Number</i>	<i>Description</i>
DSC01032	Sign at entrance of the facility
DSC01033	General view of facility
DSC01034	Condenser and exhaust pipe of a dehydrator
Burda/Golden Central Production Facility – September 29, 2016	
<i>File Number</i>	<i>Description</i>
DSC01036	Sign at entrance of the facility
DSC01037	General view of facility
DSC01038	Flares (on the left is for blowdowns, on the right is for emission from storage tanks)
DSC01039	Pump
DSC01041	Pump
DSCN1351	Control valve
DSCN1352	Control valve
DSCN1353	Control valve pressure
DSCN1354	Close up of control valve
DSCN1355	Close up of control valve
DSCN1356	Control valve
DSCN1357	Tank Batteries
DSCN1358	Tank Batteries
DSCN1359	Tank Batteries
DSCN1360	Leaking Tank Battery
DSCN1361	Leaking Tank Battery, close up
DSCN1362	Leaking Tank Battery
DSCN1363	Leaking Tank Battery
DSCN1364	Tank Batteries
DSCN1365	Separators
Julie Facility – September 29, 2016	
<i>File Number</i>	<i>Description</i>
DSC01042	Sign at the entrance of the facility
DSC01043	General view of facility
DSCN1367	Julie Facility sign
DSCN1368	Tank Batteries

TABLE 3: PHOTOLOG OF FACILITIES INSPECTED SEPTEMBER 28-30, 2016
(continued)

Julie Facility – September 29, 2016 (continued)	
<i>File Number</i>	<i>Description</i>
DSCN1369	Leaking Tank Battery
DSCN1370	Pressure relief system box
DSCN1371	Pressure relief system box
DSCN1372	Pressure relief system
Betty #1H (Coats SW) Drill Pad and Facility – September 29, 2016	
<i>File Number</i>	<i>Description</i>
DSC01044	Sign at entrance of the facility
DSC01045	General view of facility
DSC01046	Pumpjack
DSCN1373	Betty #1H (Coats SW) sign
DSCN1374	Tank Batteries
DSCN1375	Well head
DSCN1376	Well head
Zunker Central Production Facility – September 29, 2016	
<i>File Number</i>	<i>Description</i>
DSC01047	Sign at entrance of the facility
DSC01048	General view of the facility
DSC01049	General view of the facility
DSC01050	General view of the facility
DSCN1377	Zunker sign
DSCN1378	Tank Batteries
DSCN1379	Compressor
DSCN1380	Flare and separators
DSCN1381	Tank Batteries
DSCN1382	Leaking Tank Battery
Dickson-Allen/Patsy Central Production Facility – September 29, 2016	
<i>File Number</i>	<i>Description</i>
DSC01051	Sign at entrance of the facility
DSC01052	General view of the facility
DSC01053	General view of the facility
DSC01054	Flares (on the left is for blowdown, on the right is for emission from storage tanks)
DSCN1383	Dickson-Allen / Patsy sign
DSCN1384	Tank Batteries
DSCN1385	Tank Batteries
DSCN1386	Tank Batteries
DSCN1387	Flare, separators, VRU, piping, other equipment
DSCN1388	Leaking Tank Battery and VRU
DSCN1389	Flares
Dougherty Central Production Facility – September 30, 2016	
<i>File Number</i>	<i>Description</i>
DSC01055	Flares
DSC01056	Sign at the entrance of the facility

TABLE 3: PHOTOLOG OF FACILITIES INSPECTED SEPTEMBER 28-30, 2016
(continued)

Opiela/Fitch Central Production Facility – September 30, 2016	
<i>File Number</i>	<i>Description</i>
DSC01057	Sign at the entrance of the facility
DSC01058	General view of the facility
DSC01059	General view of the facility
DSC01060	Storage tanks (oil)
Red Crest-Horizon Central Production Facility – September 30, 2016	
<i>File Number</i>	<i>Description</i>
DSC01061	Sign at the entrance of the facility
DSC01062	Flares
DSC01063	General view of the facility
DSC01064	General view of the facility, storage tanks
DSC01065	Flares
DSCN1390	VRU controller leak
DSCN1391	Well heads
DSCN1392	Well heads
DSCN1393	Well heads
DSCN1394	Well heads

ATTACHMENTS

Attachment 1 - Map of Facilities Inspected

**Encana Oil and Gas (USA) Inc.
Eagle Ford Inspections Attachments
September 28-30, 2016**

**Attachment 1
Map of Facilities Inspected**

